

Dr  
RW



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPEAL BRIEF FOR THE APPELLANT

Ex parte Jarmo MAKINEN et al.

**CONTROL OF TRANSMISSION POWER IN A RADIO SYSTEM**

Serial No. 09/909,039  
Appeal No.: Unknown  
Group Art Unit: 2121

Enclosed is a check in the amount of Five Hundred Dollars (\$500.00) to cover the official fee for this Appeal Brief. In the event that there may be any fees due with respect to the filing of this paper, please charge Deposit Account No. 50-2222.

Peter Flanagan  
Attorney for Appellants  
Reg. No. 58,178

SQUIRE, SANDERS & DEMPSEY LLP  
8000 Towers Crescent Drive, 14<sup>th</sup> Floor  
Tysons Corner, VA 22182-2700

Atty. Docket: 59643.00128

PCF/mmi:kmp

Encls: Check No. 14388  
Appeal Brief (in triplicate)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Appellant:

Confirmation No.: 8466

Jarmo MAKINEN et al.

Appeal No.: Unknown

Serial Number: 09/909,039

Group Art Unit: 2617

Filed: July 19, 2001

Examiner: Willie J. Daniel, Jr.

For: CONTROL OF TRANSMISSION POWER IN A RADIO SYSTEM

BRIEF ON APPEAL

May 1, 2006

I. INTRODUCTION

This is an appeal from the final rejection set forth in an Official Action dated November 16, 2005, finally rejecting claims 12-36, all of the claims pending in this application. Claims 12-17, 19, 23-24, 27-34, and 36 stand rejected under 35 U.S.C. 102(b) as being anticipated by European Patent No. 0847146 of Endo et al. ("Endo"). Claims 18 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of U.S. Patent No. 5,873,028 of Nakano et al. ("Nakano"). Claims 21-22 and 25-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of U.S. Patent No. 5,878,329 of Mallinckrodt ("Mallinckrodt"). Claim 35 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of U.S. Patent No. 5,822,318 of Tiedemann et al. ("Tiedemann"). A Pre-Appeal Brief Request for Review, PTO/SB/33 and Notice of Appeal were timely filed on February 15, 2006. A Notice of Panel Decision from

05/02/2006 KBE/ENAI 00000024 09909039

500.00 DP

01 FC:1402

Pre-Appeal Brief Review was issued on March 31, 2006, indicating that claims 12-36 are still rejected, and that the application remains under appeal. This Appeal Brief is being timely filed within one month of the mail date of the Notice of Panel Decision.

## II. REAL PARTY IN INTEREST

The real party in interest in this application is Nokia Corporation, of Espoo, Finland, by virtue of an Assignment by the inventors to Nokia Networks Oy, of Espoo, Finland (which is an entity of Nokia Corporation), which assignment was submitted for recordation on October 23, 2001, by first class mail, and which was recorded at Reel 012408, Frame 0268, on December 31, 2001.

## III. STATEMENT OF RELATED APPEALS AND INTERFERENCES

There are no known related appeals and/or interferences which will directly effect or be directly effected by or have a bearing on the Board's decision in this appeal.

## IV. STATUS OF CLAIMS

Claims 12-36, all of the claims pending in the present application, are rejected as being unpatentable over certain alleged prior art. Claims 1-11 were previously cancelled on July 14, 2004. Each of claims 12-36 is being appealed based on its respective rejection: claims 12-17, 19, 23-24, 27-34, and 36 stand rejected under 35 U.S.C. 102(b) as being

anticipated by Endo, claims 18 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Nakano, claims 21-22 and 25-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Mallinckrodt, and claim 35 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Tiedemann. Each of the appealed claims stands or falls separately, because they are being argued separately and identified under a separate heading, as required by 37 C.F.R. 41.37, as can be seen in Section VIII below.

#### V. STATUS OF AMENDMENTS

Claims 12-36 stand as they were previously presented prior to the Final Office Action of November 16, 2005, which is the subject of this appeal. No amendments have been submitted or entered since that time. Thus, claims 12-36 are pending.

#### VI. SUMMARY OF CLAIMED SUBJECT MATTER

The independent claims involved in this appeal are claims 12, 24, and 27-36.

Claim 12, upon which claims 12-17 and 19-23 directly depend, and upon which claim 18 depends by virtue of its dependence on claim 17, is directed to a method for controlling transmission power in a radio system having a transmitting end and a receiving end. *See, for example*, page 4, lines 21-34 of the specification, and Figure 1, reference numerals A and B. The method includes transmitting a digital signal from the transmitting

end to the receiving end. *See, for example*, page 4, lines 21-34 and page 1, line 9, and Figure 1, reference numeral RP. The method also includes receiving said digital signal at the receiving end. *See, for example*, page 4, lines 21-34 and page 1, line 9. The method further includes setting an initial value of the transmission power so that no pseudo errors are detected, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 3, lines 12-24, page 3, lines 25-32, page 7, lines 3-8, and Figure 7. The method additionally includes monitoring pseudo error occurrence in the received signal at the receiving end. *See, for example*, page 5, lines 8-18, and Figure 1, reference numerals Sma and Smb, as well as Figure 2, reference numeral 20 and Figure 3, reference numeral 30. The method also includes decreasing the transmission power gradually from the initial value at the transmission end when the pseudo error occurrence in an error-free reception does not fulfill a predetermined condition. *See, for example*, page 3, lines 25-32, page 6, lines 1-5, and Figure 2, reference numeral 24 as well as Figure 3, reference numeral 33. The method further includes increasing the transmission power by a predetermined amount when the pseudo error occurrence in the error-free reception fulfills the predetermined condition. *See, for example*, page 6, lines 6-9, and Figure 2, reference numeral 21 as well as Figure 3, reference numeral 31.

Claim 24, upon which claims 25 and 26 directly depend, is directed to a radio system. *See, for example*, page 1, line 4, and Figure 1. The radio system includes at a

receiving end, first means adapted to monitor pseudo error occurrence in a received signal and to produce a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 4, lines 21-34, page 5, lines 8-18, page 5, lines 34-35, page 6, lines 10-21, page 8, lines 11-32, page 9, lines 4-8, page 10, lines 18-22, and Figure 1, reference numeral SMb (in a transmission RP from reference numeral A to reference numeral B), as well as Figure 2, reference numeral 20, Figure 3, reference numeral 30, and Figure 4. The radio system also includes at a transmitting end, second means for adjusting transmission power responsive to said control signal by decreasing the transmission power when the pseudo error occurrence in the error-free reception does not fulfill the predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition. *See, for example*, page 4, lines 21-34, page 5, lines 8-18, page 5, lines 19-31, page 6, lines 1-5, page 6, lines 6-9, page 7, lines 16-23, page 7, lines 24-31, page 8, line 33 to page 9, line 3, page 9, lines 4-8, and Figure 1, reference numeral SMa (in a transmission RP from reference numeral A to reference numeral B), as well as Figure 2, reference numeral 21, Figure 3, reference numeral 31, and Figure 5.

Claim 27 is directed to a radio receiver configured to monitor pseudo error

occurrence in a received signal and to produce a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 4, lines 21-34, page 5, lines 8-18, page 5, lines 34-35, page 6, lines 10-21, page 7, lines 3-8, page 8, lines 11-32, page 9, lines 4-8, page 10, lines 18-22, and Figure 1, reference numeral SMb (in a transmission RP from reference numeral A to reference numeral B), as well as Figure 2, reference numeral 20, Figure 3, reference numeral 30, and Figure 4.

Claim 28 is directed to a radio transmitter configured to adjust transmission power responsive to a control signal, the control signal indicating when pseudo errors are detected in a receiver and when pseudo error occurrence in the receiver is below a predetermined condition for an error-free reception, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur, by decreasing the transmission power when the pseudo error occurrence does not fulfill the predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition. *See, for example*, page 4, lines 21-34, page 5, lines 8-18, page 5, lines 19-31, page 6, lines 1-5, page 6, lines 6-9, page 7, lines 16-23, page 7, lines 24-31, page 8, line 33 to page 9, line 3, page 9, lines 4-8, and Figure 1, reference numeral SMa (in

a transmission RP from reference numeral A to reference numeral B), as well as Figure 2, reference numeral 21, Figure 3, reference numeral 31, and Figure 5.

Claim 29 is directed to a control unit for a transmitting end of a radio link system. *See, for example*, page 4, lines 21-34 and page 5, lines 1-8. The control unit is configured to set an initial value of transmission power so that no pseudo errors are detected in a received signal in a receiving end of the radio link system, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 3, lines 12-24, page 3, lines 25-32, page 7, lines 3-8, and Figure 7. The control unit is also configured to adjust the transmission power responsive to a power control message received in the control unit by decreasing the transmission power when pseudo error occurrence in an error-free reception does not fulfill a predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition, wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication whether pseudo error occurrence in an error-free reception fulfills the predetermined condition. *See, for example*, page 3, lines 25-32, page 6, lines 1-5, page 6, lines 6-9, and Figure 2, reference numerals 21 and 24 as well as Figure 3, reference numerals 31 and 33.

Claim 30 is directed to a control unit for a receiving end of a radio link system, the



control unit configured to produce and send a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 3, lines 12-24, page 3, lines 25-32, page 5, lines 1-8, and Figure 7.

Claim 31 is directed to a computer program, embodied on a computer readable medium. *See, for example*, page 9, lines 4-8, and page 10, line 33 to page 11, line 5. The computer program controls a computing system to perform the step of setting an initial value of transmission power so that no pseudo errors are detected in a received signal in a receiving end of the radio link system, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 3, lines 12-24, page 3, lines 25-32, page 7, lines 3-8, and Figure 7. The computer program also controls a computing system to perform the step of adjusting the transmission power responsive to a power control message by decreasing the transmission power when pseudo error occurrence in an error-free reception does not fulfill a predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition, wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication

whether pseudo error occurrence in an error-free reception fulfills the predetermined condition. *See, for example*, page 3, lines 25-32, page 6, lines 1-5, page 6, lines 6-9, and Figure 2, reference numerals 21 and 24 as well as Figure 3, reference numerals 31 and 33.

Claim 32 is directed to a computer program, embodied on a computer readable medium, said computer program controlling a computing system to perform the step of producing a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 3, lines 12-24, page 3, lines 25-32, page 9, lines 4-8, page 10, line 33 to page 11, line 5, and Figure 7.

Claim 33 is directed to a method for controlling transmission power in a radio link system. *See, for example*, page 4, lines 21-34 of the specification, and Figure 1, reference numerals A and B. The method includes sending a digital signal. *See, for example*, page 4, lines 21-34 and page 1, line 9, and Figure 1, reference numeral RP. The method also includes setting an initial value of transmission power so that no pseudo errors are detected in a received signal in a receiving end of the radio link system, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for*

*example*, page 3, lines 12-24, page 3, lines 25-32, page 7, lines 3-8, and Figure 7. The method also includes receiving a power control message, which is based on information on pseudo errors detected in the received signal in the receiving end and indicating whether pseudo error occurrence in an error-free reception is below a predetermined condition. *See, for example*, page 7, lines 3-8. The method further includes decreasing the transmission power from the initial value when the pseudo error occurrence in the error-free reception does not fulfill the predetermined condition. *See, for example*, page 3, lines 25-32, page 6, lines 1-5, and Figure 2, reference numeral 24 as well as Figure 3, reference numeral 33. The method additionally includes increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition. *See, for example*, page 6, lines 6-9, and Figure 2, reference numeral 21 as well as Figure 3, reference numeral 31.

Claim 34 is directed to a method for controlling transmission power in a radio link system. *See, for example*, page 4, lines 21-34 of the specification, and Figure 1, reference numerals A and B. The method includes receiving a digital signal. *See, for example*, page 4, lines 21-34 and page 1, line 9, and Figure 1, reference numeral RP. The method includes monitoring pseudo error occurrence in the received signal, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 5, lines 8-18, and Figure 1, reference numerals Sma and Smb, as well as Figure 2, reference numeral 20 and Figure 3, reference numeral 30. The method also

includes producing a power control message based on information on pseudo errors detected in the received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition. *See, for example*, page 7, lines 3-8.

The method further includes sending the power control message to a transmitting end of the radio link system. *See, for example*, page 7, lines 3-8.

Claim 35 is directed to a forward error correction decoder for a radio link system. *See, for example*, page 7, line 34 to page 8, line 10. The forward error correction decoder includes a first output for outputting a corrected bit stream, wherein the corrected bit stream is obtained by removing redundancy from a received bit stream. *See, for example*, page 9, lines 9-16, and Figure 6. The forward error correction decoder also includes a second output for outputting an error signal indicating corrections made by the forward error correction decoder to obtain the corrected bit stream, wherein the error signal provides information for producing a control signal, the control signal indicating whether pseudo errors are detected in a received signal and whether the pseudo error occurrence in an error-free reception fulfills a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 3, lines 12-24, page 7, line 34 to page 8, line 10, page 9, lines 17-25, page 9, lines 26-35, page 10, lines 18-22, page 10, lines 1-17, and Figure 4 as well as Figure 7.

Claim 36 is directed to a method for controlling transmission power in a radio

system having a transmitting end and a receiving end. *See, for example*, page 4, lines 21-34 of the specification, and Figure 1, reference numerals A and B. The method includes transmitting a digital signal from the transmitting end to the receiving end. *See, for example*, page 4, lines 21-34 and page 1, line 9, and Figure 1, reference numeral RP. The method also includes receiving said digital signal at the receiving end. *See, for example*, page 4, lines 21-34 and page 1, line 9. The method further includes setting an initial value of the transmission power so that no pseudo errors are detected, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur. *See, for example*, page 3, lines 12-24, page 3, lines 25-32, page 7, lines 3-8, and Figure 7. The method additionally includes monitoring pseudo error occurrence in the received signal at the receiving end. *See, for example*, page 5, lines 8-18, and Figure 1, reference numerals Sma and Smb, as well as Figure 2, reference numeral 20 and Figure 3, reference numeral 30. The method also includes decreasing the transmission power gradually from the initial value at the transmission end when the pseudo error occurrence in an error-free reception does not fulfill a predetermined condition. *See, for example*, page 3, lines 25-32, page 6, lines 1-5, and Figure 2, reference numeral 24 as well as Figure 3, reference numeral 33. The method further includes increasing the transmission power by a predetermined amount when the pseudo error occurrence in the error-free reception fulfills the predetermined condition. *See, for example*, page 6, lines 6-9, and Figure 2, reference numeral 21 as well

as Figure 3, reference numeral 31. The method additionally includes monitoring occurrence of actual errors in the received signal at the receiving end. *See, for example*, page 10, lines 1-13. The method also includes overriding transmission power control based on monitoring of occurrence of pseudo errors by increasing transmission power if actual errors are observed. *See, for example*, page 10, lines 1-13.

Dependent claims 25 and 26 recite “said first means,” as noted above, with regard to claim 24, support for this feature may be found, for example, at page 4, lines 21-34, page 5, lines 8-18, page 5, lines 34-35, page 6, lines 10-21, page 8, lines 11-32, page 9, lines 4-8, page 10, lines 18-22, and Figure 1, reference numeral SMb (in a transmission RP from reference numeral A to reference numeral B), as well as Figure 2, reference numeral 20, Figure 3, reference numeral 30, and Figure 4.

## VII. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

As mentioned above, the grounds of rejection to be reviewed on appeal are as follows: the rejection of each of claims 12-17, 19, 23-24, 27-34, and 36 under 35 U.S.C. 102(b) as being anticipated by Endo, the rejection of each of claims 18 and 20 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Nakano, the rejection of each of claims 21-22 and 25-26 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Mallinckrodt, and the rejection of claim 35 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Tiedemann.

## VIII. ARGUMENT

Applicants respectfully submit that each of the pending claims, 12-36, recites subject matter that is neither disclosed nor suggested by the cited art, whether the cited references are taken individually or in combination. Each of the claims is being argued separately, and thus each of the claims stands or falls alone.

### **A. The Rejection of Claims 12-17, 19, 23-24, 27-34, and 36 under 35 U.S.C. 102(b) as being anticipated by Endo**

Claims 12-17, 19, 23-24, 27-34, and 36 were rejected under 35 U.S.C. 102(b) as being anticipated by Endo. Appellants respectfully traverse this rejection, because Endo does not teach the claimed “pseudo-errors,” and because Endo cannot provide the critical and unobvious advantages that certain embodiments of the present invention can provide.

As outlined in MPEP 2131, in order for a reference to anticipate a claim, the reference must teach every element of the claim. A claim is only anticipated if each and every element of the claim is described, either inherently or expressly, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987).

As discussed in the specification at page 9, lines 4-8, examples of the present invention enable the control of transmission power to be based on detecting pseudo errors in the transmission. Thus, situations are identified that are estimated as an error that nearly

happened, but did not. For example, an error-free reception is provided that is monitored for pseudo error occurrence in the received signal. The pseudo error defines an instant when a right bit or symbol decision is made, but a margin for the right bit or symbol is smaller than a limit value so that an actual error nearly occurred. An actual error, however, did not occur. Additionally, as mentioned at page 10, lines 23-32 of the present specification, certain embodiments of the present invention can be implemented at a low cost. It is respectfully submitted that the cited reference of Endo fails to disclose or suggest all the elements of any of the presently pending claims. Therefore, Endo fails to provide the critical and unobvious advantages discussed above.

As discussed in previous responses, Endo relates to a transmission power control apparatus for a mobile communication system. Endo describes providing a reverse channel error rate judgment section in a radio base station for judging a communication quality of the reverse channel by a detected reverse channel frame error rate. Referring to Figure 1 of Endo, decoder section 105 performs data error detection in a receiving signal digitized by the digital demodulation section 101, and outputs the result of detected errors to reverse channel error rate judgment section 103. Endo describes, if a report is received indicating a frame error rate of the forward channel being unfavorable, then the transmission power of the forward channel is to be increased. If the report indicates a frame error rate report being too favorable, then the transmission power of the forward channel is decreased to reduce interference.



### *1. Claim 12*

Claim 12 recites “setting an initial value of the transmission power so that no pseudo errors are detected, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.” Appellants respectfully submit that Endo does not disclose or suggest at least this feature of the claimed invention.

The Office Action took the position that Endo discloses this feature at “column, lines 13 (sic), lines 2-18; column 13, line 38 to column 15, line 13; Figs. 3 “ref.305”, 4 “ref. 407, 408”, 5-6), where the power is adjusted to a favorable level without errors.” Appellants respectfully disagree with the Office Action’s characterization.

The Office Action’s analysis is mistaken for several reasons. First, the feature recites that an “**initial value**” is set “so that no pseudo errors are detected.” However, Endo, in the passages and Figures cited deals with adjusting transmission power based on a reported or observed frame error rate, as may be seen, for example, from column 13, lines 4-8 and 38-39 as well as Figure 3, element 301, Figure 4, element 402, Figure 5, element 501, Figure 6, element 602, and Figure 7, element 701. Accordingly, Endo does not and cannot address an “**initial value**” but only a modified value.

Moreover, the Office Action is mistaken in asserting that Endo’s reported or observed frame error rate corresponds with the claimed “pseudo error” and thus Endo does

not disclose or suggest that an “initial value” is set “so that no **pseudo errors** are detected.”

Endo addresses only actual errors and not pseudo errors.

The Office Action responded to this argument, at pages 19-20 of the Office Action mailed November 16, 2005, by asserting that Endo’s “setting a field strength” reads on the claimed “initial value” and that Endo’s framer error rate corresponds with the claimed “pseudo errors,” citing the same previously mentioned passages of Endo.

Appellant has already pointed out that whatever value is set by Endo is not an initial value, because Endo has already made observation and/or report as to frame error rate, which implies that the initial value is going to be modified by Endo to adjust the frame error rate. Additionally, Endo’s frame error rate does not correspond to the claimed “pseudo errors.”

Claim terms are to be read in the context of the particular claim, as well is in the context of the entire patent application, including the specification. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 75 USPQ2d 1321, 1326 (Fed. Cir. 2005) (en banc). Moreover, patent applicants like Appellants are entitled to be their own lexicographer, and when the specification reveals a special definition given to a claim term, the inventors’ lexicography governs. *Id.* at 1329. *See also CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366, 62 USPQ2d 1658, 1662 (Fed Cir. 2002).

Appellants have made it very clear that actual errors and pseudo errors are two different things. Claim 12, for example, explains that “a pseudo error defining an instant

when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.” Similar language is found in the present specification at page 3, lines 12-24. The Office Action in essence ignores this definition and equates pseudo errors with actual errors. The frame error rate of Endo is an actual error rate. This fact remains undisputed by the Office Action. Indeed, the Office Action made no response to this fact, except to assert that the framer error rate corresponds to the claimed “pseudo errors.” Appellants respectfully submit that such a construction is unreasonable, and legally erroneous because it fails to accord proper deference to the inventors’ lexicography. As MPEP 2111.01 (III) indicates, “An applicant is **entitled** to be his or her own lexicographer.” (emphasis added) The Office Action’s approach of ignoring applicant’s explanation of the claim term unfairly destroys this entitlement.

Moreover, claim 12 recites “monitoring **pseudo error occurrence** in the received signal at the receiving end.” Because Endo does not address pseudo errors, Endo also does not monitor pseudo error occurrence. The Office Action took the position that this feature is disclosed by Endo at column 11, lines 23-30, column 12, lines 2-6, and Figures 3-6. However, as noted above in those passages, Endo does not address pseudo errors or “pseudo error occurrence” but rather actual error occurrence, namely framer error rate, as can be seen at column 11, lines 26-28 and column 12, lines 2-4, as well as Figure 3, element 301, Figure 4, elements 402 (data error) and 407 (frame error rate), Figure 5, element 501,

and Figure 6, elements 602 (data error) and 612 (frame error rate). Accordingly, Appellants respectfully submit that Endo also does not disclose or suggest at least “monitoring **pseudo error occurrence** in the received signal at the receiving end.”

Additionally, claim 12 recites “decreasing the transmission power gradually from the initial value at the transmission end when the **pseudo error occurrence** in an error-free reception does not fulfill a predetermined condition.” Because Endo does not address pseudo errors or pseudo error occurrence, as discussed above, Endo does not and cannot disclose or suggest this feature of claim 12. The Office Action took the position that Endo discloses this feature at column 12, line 56 to column 13, line 41, Figure 3, Figure 4, element 411, Figure 5, and Figure 6, element 616. Appellants respectfully disagree with the Office Action’s mistaken mischaracterization of Endo.

Endo does discuss decreasing transmission power (*See, for example*, Figure 6, element 616), but does not discuss doing so “gradually from the initial value at the transmission end when the **pseudo error occurrence** in an error-free reception does not fulfill a predetermined condition.” The Office Action essentially ignores this aspect of the limitation. As explained above, Endo does not anywhere discuss pseudo error occurrence. As noted above, the kind of error occurrence that Endo addresses is actual error occurrence in the form of frame error rate.

The Office Action responded to this argument by asserting that the cited portions show the power being decreased. As has just been explained, however, Endo decreasing a

power level is not sufficient to disclose or suggest the entire feature: “decreasing the transmission power gradually from the initial value at the transmission end when the pseudo error occurrence in an error-free reception does not fulfill a predetermined condition.” (The portion of the feature that the Office Action fails to address has been underlined for emphasis.)

Likewise, claim 12 recites “increasing the transmission power by a predetermined amount when the **pseudo error occurrence** in the error-free reception fulfills the predetermined condition.” Just as Endo does not disclose or suggest decreasing the transmission power when a pseudo error occurrence in an error-free reception does not fulfill a predetermined condition, so also, Endo does not disclose or suggest increasing the transmission power when a pseudo error occurrence in an error-free reception fulfills a predetermined condition.

The Office Action took the position that this feature is disclosed at column 12, line 56, to column 13, line 38, column 15, line 57 to column 16, line 4, Figure 3, Figure 4, element 410, Figure 5, and Figure 6. Appellants respectfully disagree with the Office Action’s analysis.

As explained above, Endo does not address whether a pseudo error occurrence fulfills a predetermined condition, and accordingly, Endo does not disclose or suggest “increasing the transmission power by a predetermined amount when the **pseudo error occurrence** in the error-free reception fulfills the predetermined condition.”

The Office Action responded by asserting that Endo does teach this feature, because Endo discloses increasing the transmission power “where an error is detected.” Appellants respectfully note that “an error” does not read on the claimed “pseudo error.” Accordingly, Appellants request that the rejection of claim 12 be reversed.

## ***2. Claim 13***

Claim 13 is dependent on claim 12, and additionally recites, “wherein the predetermined condition comprises detecting the pseudo error.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of column 12, line 56 to column 13 line 2, column 14 lines 5-8, as well as Figure 4, element 402, and Figure 6, element 602 is misplaced, because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “wherein the predetermined condition comprises detecting the pseudo error.” Therefore, Appellants respectfully request that the rejection of claim 13 be reversed.

## ***3. Claim 14***

Claim 14 is dependent on claim 12, and additionally recites, “wherein the predetermined condition comprises detecting a second pseudo error within a predetermined

time interval after the last pseudo error.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of column 13, lines 2-18, column 13 line 38 to column 15, line 13, as well as Figure 3, and Figure 4, element 403 is misplaced, because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “wherein the predetermined condition comprises detecting a second pseudo error within a predetermined time interval after the last pseudo error.” Therefore, Appellants respectfully request that the rejection of claim 14 be reversed.

#### ***4. Claim 15***

Claim 15 is dependent on claim 12, and additionally recites, among other things, “wherein the predetermined condition comprises detecting a predetermined number of pseudo errors within a predetermined time interval.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of column 13, lines 2-18, column 13 line 38 to column 15, line 13, as well as Figure 3, Figure 4, element 403, Figure 5, and Figure 6 element 603 is misplaced, because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “wherein the

predetermined condition comprises detecting a predetermined number of pseudo errors within a predetermined time interval.” Therefore, Appellants respectfully request that the rejection of claim 15 be reversed.

#### ***5. Claim 16***

Claim 16 is dependent on claim 12, and additionally recites, among other things, “wherein the transmission power is increased immediately when the pseudo error is detected.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of column 13, lines 35-38, as well as Figure 3 and Figure 4, element 403 is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “wherein the transmission power is increased immediately when the pseudo error is detected.” Therefore, Appellants respectfully request that the rejection of claim 16 be reversed.

#### ***6. Claim 17***

Claim 17 is dependent on claim 12, and additionally recites, among other things, “wherein the transmission power is decreased in predetermined steps for a predetermined time period at each step.” Appellants respectfully submit that this feature is neither



disclosed nor suggested, because Endo does not disclose or suggest either that the transmission power is decrease in steps or that the steps are for a predetermined period.

The Office Action cited column 13, lines 2-18, column 13, line 38 to column 15, line 13, Figure 3, and Figure 4, element 403. The Office Action asserted that “steps would be inherent.” However, Appellant respectfully asserts that other ways of reducing the transmission power are available, and thus “steps” are not inherent. Moreover, the passages the Office Action cited does not disclose or suggest that the transmission power is decreased with “a predetermined time period” at each step. Accordingly, it is respectfully submitted that Endo does not disclose or suggest all of the elements of claim 17. Therefore, Appellants respectfully request that the rejection of claim 17 be reversed.

#### ***7. Claim 19***

Claim 19 is dependent on claim 12, and additionally recites, “(a) adjusting the transmission power after the set-up of the radio system to the initial value high enough so that no pseudo errors are detected at the receiving end,” “(b) decreasing the transmission power until a first pseudo error is detected,” “(c) increasing the transmission power in response to the detected pseudo error,” and “(d) jumping to phase (b) if no pseudo errors are detected during a predetermined time period after the transmission power has been increased in phase (c).” Appellants respectfully submit that these features are neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of

errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action's citation of elements L1 and 202, column 13, lines 35-38, column 13, line 38 to column 14 line 56, as well as Figure 3 and Figure 4, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, "(a) adjusting the transmission power after the set-up of the radio system to the initial value high enough so that no pseudo errors are detected at the receiving end," "(b) decreasing the transmission power until a first pseudo error is detected," "(c) increasing the transmission power in response to the detected pseudo error," and "(d) jumping to phase (b) if no pseudo errors are detected during a predetermined time period after the transmission power has been increased in phase (c)." Therefore, Appellants respectfully request that the rejection of claim 19 be reversed.

#### ***8. Claim 23***

Claim 23 is dependent on claim 12, and additionally recites, among other things, "increasing the transmission power temporarily to the maximum transmission power when a predetermined error rate threshold is exceeded." Endo does not disclose or suggest this feature, because Endo does not disclose or suggest "increasing the transmission power temporarily to the maximum transmission power" at any time.

The Office Action cited column 13, lines 13-44, Figure 3, element 303, and Figure 4 as disclosing this feature. Appellants respectfully note that only column 13, lines 42-44

even discusses increasing the transmission power to the maximum level, and recognizes that this prevents the transmission power level from being further increased. However, Endo only teaches that this maximum level will be reached coincidentally, and does not recommend either intentionally or temporarily “increasing the transmission power ... to the maximum transmission power.” Thus, Endo does not disclose or suggest all of the elements of claim 23. Therefore, Appellants respectfully request that the rejection of claim 23 be reversed.

#### ***9. Claim 24***

Claim 24 recites, “at a receiving end, first means adapted to monitor pseudo error occurrence in a received signal and to produce a control signal indicating **when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition**, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur” and “at a transmitting end, second means for adjusting transmission power responsive to said control signal by decreasing the transmission power **when the pseudo error occurrence in the error-free reception does not fulfill the predetermined condition** and by increasing the transmission power **when the pseudo error occurrence fulfills the predetermined condition.**” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does

not disclose or suggest detecting any type of errors other than actual errors nor does it disclose or suggest conditioning anything on the basis of any kind of errors other than actual errors.

Accordingly, Appellants respectfully submit that the Office Action's citation of elements L1, 202, 201, and 108, column 12, lines 44-47, column 12, line 56 to column 13, line 13, column 13, lines 20-34, column 13, line 35 to column 15 line 13, as well as Figure 3, Figure 4, Figure 5, and Figure 6 is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, "at a receiving end, first means adapted to monitor pseudo error occurrence in a received signal and to produce a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur" and "at a transmitting end, second means for adjusting transmission power responsive to said control signal by decreasing the transmission power when the pseudo error occurrence in the error-free reception does not fulfill the predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition." Therefore, Appellants respectfully request that the rejection of claim 24 be reversed.

### ***10. Claim 27***

Claim 27 recites, among other things, “a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest indicating in any signal any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of element 202, column 11, lines 20-34, column 12, line 56 to column 13, line 13, column 13, line 35 to column 15 line 13, as well as Figure 3, Figure 4, Figure 5, and Figure 6 is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition.” Therefore, Appellants respectfully request that the rejection of claim 27 be reversed.

### ***11. Claim 28***

Claim 28 recites, among other things, “the control signal indicating when pseudo errors are detected in a receiver and when pseudo error occurrence in the receiver is below a predetermined condition for an error-free reception.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants

respectfully submit that the Office Action's citation of element 201, column 12, lines 44-47, column 12, line 56 to column 13, line 13, column 13, line 35 to column 15 line 13, as well as Figure 3, Figure 4, Figure 5, and Figure 6 is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, "the control signal indicating when pseudo errors are detected in a receiver and when pseudo error occurrence in the receiver is below a predetermined condition for an error-free reception." Therefore, Appellants respectfully request that the rejection of claim 28 be reversed.

#### ***12. Claim 29***

Claim 29 recites, among other things, "wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication whether pseudo error occurrence in an error-free reception fulfills the predetermined condition." Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action's citation of elements 201 and 202, column 11, lines 30-34, column 12, lines 34-40, column 12, line 56 to column 13, line 41, column 15, line 57 to column 16, line 4, column 13, line 38 to column 15 line 13, as well as Figure 2, Figure 3, element 305, Figure 4, elements 407, 408, 410, and 411, Figure 5, and Figure 6 element 616, is misplaced because

those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication whether pseudo error occurrence in an error-free reception fulfills the predetermined condition.” Therefore, Appellants respectfully request that the rejection of claim 29 be reversed.

### ***13. Claim 30***

Claim 30 recites, among other things, “a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of element 202, column 11, lines 30-34, column 12, lines 23-40, column 12, line 56 to column 13, line 41, column 15, line 57 to column 16, line 4, as well as Figure 3, Figure 4, elements 410 and 411, Figure 5, and Figure 6, element 616, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a

predetermined condition.” Therefore, Appellants respectfully request that the rejection of claim 30 be reversed.

#### ***14. Claim 31***

Claim 31 recites, among other things, “wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication whether pseudo error occurrence in an error-free reception fulfills the predetermined condition.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of element 202, column 11, lines 30-34, column 12, lines 34-40, column 12, line 56 to column 13, line 41, column 13, lines 2-18, column 13, line 38, to column 15, line 13, column 15, line 57 to column 16, line 4, as well as Figure 3, element 305, Figure 4, elements 407, 408, 410, and 411, Figure 5, and Figure 6, element 616, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication whether pseudo error occurrence in an error-free reception fulfills the predetermined condition.” Therefore, Appellants respectfully request that the rejection of claim 31 be reversed.



### ***15. Claim 32***

Claim 32 recites, among other things, “producing a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of element 202, column 12, lines 30-34, column 12, line 56 to column 13, line 41, column 15, line 57 to column 16, line 4, as well as Figure 3, Figure 4, elements 410 and 411, Figure 5, and Figure 6, element 616, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “producing a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition.” Therefore, Appellants respectfully request that the rejection of claim 32 be reversed.

### ***16. Claim 33***

Claim 33 recites, among other things, “receiving a power control message, which is based on information on pseudo errors detected in the received signal in the receiving end and indicating whether pseudo error occurrence in an error-free reception is below a

predetermined condition.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action’s citation of element 202, column 11, lines 10-19, column 12, lines 30-34, column 12, line 56 to column 13, line 41, column 13, lines 2-18, column 13, line 38 to column 15, line 13, column 15, line 57 to column 16, line 4, as well as Figure 2, Figure 3, element 305, Figure 4, elements 407, 408, 410, and 411, Figure 5, and Figure 6, element 616, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “receiving a power control message, which is based on information on pseudo errors detected in the received signal in the receiving end and indicating whether pseudo error occurrence in an error-free reception is below a predetermined condition.” Therefore, Appellants respectfully request that the rejection of claim 33 be reversed.

#### ***17. Claim 34***

Claim 34 recites, among other things, “producing a power control message based on information on pseudo errors detected in the received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition.” Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly,

Appellants respectfully submit that the Office Action's citation of element 202, column 11, lines 14-19, column 11, lines 23-30, column 11, lines 30-34, column 12, lines 2-6, column 12, lines 30-34, column 12, line 56 to column 13, line 41, column 15, line 57 to column 16, line 4, as well as Figure 2, Figure 3, element 305, Figure 4, elements 407, 408, 410, and 411, Figure 5, and Figure 6, element 616, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, "producing a power control message based on information on pseudo errors detected in the received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition." Therefore, Appellants respectfully request that the rejection of claim 34 be reversed.

### ***18. Claim 36***

Claim 36 recites, among other things, "setting an initial value of the transmission power so that no pseudo errors are detected." Appellants respectfully submit that this feature is neither disclosed nor suggested, because Endo does not disclose or suggest detecting any type of errors other than actual errors. Accordingly, Appellants respectfully submit that the Office Action's citation of elements L1, 201, and 202, column 11, lines 10-19, column 11, lines 14-19, column 11, lines 23-30, column 12, lines 2-33, column 12, lines 24-47, column 12, line 56 to column 13, line 41, column 13, lines 2-18, column 13, lines 35-38, column 13, line 38 to column 15, line 13, column 15, line 57 to column 16, line

4, as well as Figure 2, Figure 3, element 305, Figure 4, elements 407, 408, 410, and 411, Figure 5, and Figure 6, element 616, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “setting an initial value of the transmission power so that no pseudo errors are detected.” Therefore, Appellants respectfully request that the rejection of claim 36 be reversed.

**B. The Rejection of claims 18 and 20 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Nakano**

Claims 18 and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Nakano. Appellants respectfully traverse this rejection, because Endo and Nakano (whether taken individually or in combination) do not teach the claimed “pseudo-errors,” and because Endo and Nakano cannot provide the critical and unobvious advantages that certain embodiments of the present invention can provide.

In rejecting claims under 35 U.S.C. 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In doing so, the PTO is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reasons must stem from some teaching, suggestion

or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. *Uniroyal Inc. v. F-Wiley Corp.*, 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the PTO are an essential part of complying with the burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Further, to establish prima facie obviousness of a claimed invention, all the claimed limitations must be suggested or taught by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

If the PTO fails to meet this burden, the Applicant is entitled to a patent. *In re Glaug*, 62 USPQ2d 1151 (Fed. Cir. 2002). In the present case, discussed in detail below, Appellants respectfully submit the PTO has failed to meet this burden.

### ***1. Claim 18***

Claim 18 depends from claim 17 (which in turn depends from claim 12) and additionally recites, “wherein a predetermined step is 1 dB.” Appellants respectfully

submit that the combination of cited references does not disclose or suggest these features.

The Office Action cited Endo as applied to claim 17, but took the position that Endo fails to disclose only “wherein a predetermined step is 1 dB.” The Office Action cited Nakano to remedy this deficiency of Endo.

Nakano generally relates to a transmission power control apparatus and method in a mobile communication system. Nakano describes suppressing the transmission power to an absolute necessary minimum level and increasing subscriber capacity by reducing an amount of interference. For example, the transmission power of a first mobile station 1a is controlled such that a difference between a reception CIR at first base station 3a with respect to first mobile station 1a and first base station target CIR becomes smaller, while the transmission power of the second mobile station 1b is controlled such that a difference between a reception CIR at first base station 3a with respect to second mobile station 1b and a second base station target CIR becomes smaller. At column 6, lines 24-40, Nakano does describe adjusting transmission power control, but specifically states the steps are 0.5 dB, at column 6, line 27 (“at 0.5 dB steps”).

Appellants respectfully submit that, as explained above, Endo does not inherently or otherwise disclose or suggest a predetermined step, and therefore, even if Nakano had disclosed 1 dB steps, one of ordinary skill in the art would not be motivated to combine Nakano with Endo, because Endo does not describe reducing the transmission power in predetermined steps.

Moreover, Nakano does not remedy the above-described deficiencies of Endo with regard to claims 12 and 17. Accordingly, Appellants respectfully submit that the Office Action's citation of column 6, lines 25-41, column 7, lines 38-43, column 5, lines 13-24, column 8, lines 51-58, column 9, lines 55-60, column 10, lines 31-37, column 1, lines 14-16, and Figure 6 of Nakano, is misplaced because those passages do not address the above-identified deficiencies of Endo, and because there is not proper motivation to combine Nakano with Endo – only hindsight reconstruction in view of Appellants' disclosure. Therefore, Appellants respectfully request that the rejection of claim 18 be reversed.

## ***2. Claim 20***

Claim 20 depends from claim 12. The Office Action cited Endo as applied to claim 12, but took the position that Endo fails to disclose only “wherein the predetermined amount for increasing the transmission is 1 or 2 dB.”

Nakano is discussed above. Even assuming that Nakano disclosed “wherein the predetermined amount for increasing the transmission is 1 or 2 dB,” there is no teaching, motivation, or suggestion to combine Nakano with Endo.

The Office Action took the position that it would have been obvious to combine Endo with Nakano “in order to suppress power to a minimum level while satisfying the required communication quality.” However, Nakano discloses that 0.5 dB steps can be

used at column 6, line 27, accordingly, if a minimum level of increase were desired, one of ordinary skill in the art were to read Nakano, one of ordinary skill in the art would use the 0.5 dB steps, not 1 or 2 dB. Accordingly, it is respectfully submitted that there is no teaching motivation or suggestion to combine Endo and Nakano to disclose or suggest all of the elements of claim 20.

Moreover, Nakano does not remedy the above-described deficiencies of Endo with regard to claim 12. Accordingly, Appellants respectfully submit that the Office Action's citation of column 6, lines 25-41, column 7, lines 38-43, column 5, lines 13-24, column 8, lines 51-58, column 9, lines 55-60, column 10, lines 31-37, column 1, lines 14-16, and Figure 6 of Nakano, is misplaced because those passages do not address the above-identified deficiencies of Endo, and because there is not proper motivation to combine Nakano with Endo – only hindsight reconstruction in view of Appellants' disclosure. Therefore, Appellants respectfully request that the rejection of claim 18 be reversed.

**C. The rejection of claims 21-22 and 25-26 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Mallinckrodt**

Claims 21-22 and 25-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Mallinckrodt. Appellants respectfully traverse this rejection, because Endo and Mallinckrodt (whether taken individually or in combination) do not teach the



claimed “pseudo-errors,” and because Endo and Mallinckrodt cannot provide the critical and unobvious advantages that certain embodiments of the present invention can provide.

### *1. Claim 21*

The Office Action cited Endo as teaching most of the features of claim 21, but cited Mallinckrodt as disclosing “using forward error correction (FEC) in the transmitted signal; decoding the signal at the receiving end by means of a FEC decoder; and interpreting the corrections made by the FEC decoder as pseudo errors.”

Endo is discussed above. Mallinckrodt generally relates to power control of an integrated cellular communications system. Mallinckrodt describes the power controlled by monitoring the bit error rate and the signal-to-noise ratio. Mallinckrodt describes controlling the power output levels of transmitters to a minimum necessary for satisfactory communications. Each transmission includes a code representative of the transmitter output level. The receivers compare this code to the received signal strength and adjust their associated transmitter power output levels accordingly. The bit error rate and the signal-to-noise ratio are monitored by receivers to develop a measure of signal quality.

Claim 21 is dependent on claim 12, and additionally recites, among other things, “interpreting the corrections made by the FEC decoder as pseudo errors.” As explained above, Endo fails to disclose or suggest any treatment of pseudo errors. Mallinckrodt fails to remedy the deficiencies of Endo.

The Office Action cited the abstract, column 9, lines 7-41, column 11, lines 1-21, column 12, lines 30-35, Figure 7, and Figure 9 of Mallinckrodt, as disclosing this feature. None of those passages, however, discuss interpreting **anything** as a pseudo error. Indeed, those passages do not even mention pseudo errors. In direct contrast, the places where those passages that mention any kind of error refer to actual error. *See*, column 11, line 8 (“actual error rate”).

Thus, Appellants respectfully submit that Mallinckrodt does not remedy the deficiencies of Endo with respect to claim 21. Therefore, Appellants respectfully request that the rejection of claim 21 be reversed.

## ***2. Claim 22***

Claim 22 is dependent on claim 12, and additionally recites, among other things, “using at the receiving end a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making **a decision on whether the pseudo error has occurred.**” As discussed above, neither Endo nor Mallinckrodt discusses any processing of any kind, including making any decisions regarding pseudo errors, but rather the references deal only with actual errors.

Thus, Appellants respectfully submit that Mallinckrodt does not remedy the deficiencies of Endo with respect to claim 22. Accordingly, Appellants respectfully submit that the Office Action’s citation of elements 101, 152, and 202, column 11, line 49 to

column 12, line 40, column 13, line 57 to column 14, line 8, column 9, lines 35-38 and 50-56, column 12, lines 20-35, column 13, lines 33-40, as well as Figure 1, Figure 2, and Figure 7 of Mallinckrodt, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “using at the receiving end a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred.” Therefore, Appellants respectfully request that the rejection of claim 22 be reversed.

### *3. Claim 25*

Claim 25 is dependent on claim 24, and additionally recites, among other things, “wherein said first means include a **FEC decoder** for decoding a FEC coded signal and **for detecting pseudo errors.**” As discussed above, neither Endo nor Mallinckrodt discusses any processing of any kind, including detecting pseudo errors, but rather the references deal only with actual errors.

Therefore, Appellants respectfully submit that Mallinckrodt does not remedy the deficiencies of Endo with respect to claim 25. Accordingly, Appellants respectfully submit that the Office Action’s citation of elements 102, 156, and 201, the abstract, column 11, line 10 to column 12, line 3, column 9, lines 7-41, column 11, lines 1-21, column 12, lines 20-35, column 13, lines 33-40, as well as Figure 1, Figure 2, Figure 7, and Figure 9 of

Mallinckrodt, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “wherein said first means include a FEC decoder for decoding a FEC coded signal and for detecting pseudo errors.” Therefore, Appellants respectfully request that the rejection of claim 25 be reversed.

#### ***4. Claim 26***

Claim 26 is dependent on claim 24, and additionally recites, among other things, “wherein said first means include a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a **decision on whether the pseudo error has occurred.**” As discussed above, neither Endo nor Mallinckrodt discusses any processing of any kind, including making any decisions regarding pseudo errors, but rather the references deal only with actual errors.

Thus, Appellants respectfully submit that Mallinckrodt does not remedy the deficiencies of Endo with respect to claim 26. Accordingly, Appellants respectfully submit that the Office Action’s citation of elements 101, 152, and 202, column 11, line 49 to column 12, line 40, column 13, line 57 to column 14, line 8, column 9, lines 35-38 and 50-56, column 12, lines 20-35, column 13, lines 33-40, as well as Figure 1, Figure 2, and Figure 7 of Mallinckrodt, is misplaced because those portions do not disclose or suggest anything having to do with a pseudo error, much less what is claimed, namely, “wherein

said first means include a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred.” Therefore, Appellants respectfully request that the rejection of claim 26 be reversed.

**D. The rejection of claim 35 under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Tiedemann**

Claim 35 was rejected under 35 U.S.C. 103(a) as being unpatentable over Endo in view of Tiedemann. Appellants respectfully traverse this rejection, because Endo and Tiedemann (whether taken individually or in combination) do not teach the claimed “pseudo-errors,” and because Endo and Tiedemann cannot provide the critical and unobvious advantages that certain embodiments of the present invention can provide.

The Office Action took the position that Endo teaches all of the elements of the claim except “a first output for outputting a corrected bit stream, wherein the corrected bit stream is obtained by removing redundancy from a received bit stream; and a second output for outputting an error signal indicating corrections made by the forward error correction decoder to obtain the corrected bit stream.” The Office Action cited Tiedemann, and specifically column 6, lines 59-61, column 7, lines 7-9, 23-29, and 40-54, column 5, lines 35-39, and Figure 3 as disclosing these features.

Endo is discussed above. Tiedemann generally relates to a method and apparatus for

controlling power in a variable rate communication system. Tiedemann describes providing for a closed loop power control method. A first remote station controls the transmission power of a second remote station by transmitting a rate dependent power control signal to the second remote communication station. Because only the second communication knows its transmission rate a priori, it determines its course of action in accordance with both the received power control signal and the knowledge of its transmission rate. Forward error correction decoder 44 of Tiedemann determines an indication of error rate and provides a signal indicative of the error rate to control processor 46. Tiedemann also describes a decoder 56 that has two outputs. Decoder 56 separates two transmitted signals from received data where a second output is for outputting a second signal encoded in the transmission at a transmitting end.

Claim 35 recites, among other things, “a second output for outputting an error signal indicating corrections made by the forward error correction decoder to obtain the corrected bit stream.” What the Office Action cited as corresponding to this feature is the signal that the decoder 44 sends, which indicates the error rate to the control processor 46, and the two signals (power control signal and traffic data signal) that decoder 56 separates.

However, neither of those decoders (44 or 56) is an output for outputting an error signal that indicates “corrections made by the forward error correction decoder to obtain the corrected bit stream.” In the case of decoder 44, what is output is a frame error rate, not an indication of corrections made, as can be seen at column 6, lines 59-61. In the case of

decoder 56, what is output is traffic data and a power control signal as can be seen in Figure 3 and at column 7, lines 23-29. Specifically, nowhere does Tiedemann disclose or suggest providing an error signal indicating “corrections made by the forward error correction decoder to obtain the corrected bit stream.” Accordingly, Tiedemann does not remedy the admitted deficiencies of Endo.

Moreover, claim 35 also recites “the control signal indicating whether pseudo errors are detected in the received signal.” As explained above, Endo does not disclose or suggest any processing of pseudo errors, including any detection of them. Tiedemann also is silent as to the detection or other processing of pseudo errors. Accordingly, Tiedemann also fails to remedy this further deficiency of Endo. Thus, Appellants respectfully request that the rejection of claim 35 be reversed.

## IX. CONCLUSION

As explained above, each of claims 12-36 recites one or more elements or features that are neither disclosed nor suggested in the cited references. Among other things, the cited references do not deal with “pseudo errors” at all, much less the detailed recitations set forth above. The Office Action’s claim construction is unreasonable and legally errant, because it violates Appellants’ entitlement to be their own lexicographer. This final rejection being in error, therefore, Appellants respectfully request that this honorable Board of Patent Appeals and Interferences reverse the Examiner’s decision in this case and

indicate the allowability of application claims 12-36.

In the event that this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees which may be due with respect to this paper may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

SQUIRE, SANDERS & DEMPSEY LLP

A handwritten signature in cursive script, reading "Peter Flanagan".

Peter Flanagan  
Attorney for Applicants/ Appellants  
Registration No. 58,178

Atty. Docket No.: 59643.00128

8000 Towers Crescent Drive, 14<sup>th</sup> Floor  
Tysons Corner, VA 22182-2700  
Tel: (703) 720-7800  
Fax (703) 720-7802

PCF:mmi

Enclosures: Appendix 1: Claims Appendix  
Appendix 2: Evidence Appendix  
Appendix 3: Related Proceedings Appendix



## APPENDIX 1

### CLAIMS APPENDIX

12. (Previously Presented) A method for controlling transmission power in a radio system having a transmitting end and a receiving end, the method comprising:

transmitting a digital signal from the transmitting end to the receiving end;

receiving said digital signal at the receiving end;

setting an initial value of the transmission power so that no pseudo errors are detected, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur;

monitoring pseudo error occurrence in the received signal at the receiving end;

decreasing the transmission power gradually from the initial value at the transmission end when the pseudo error occurrence in an error-free reception does not fulfill a predetermined condition; and

increasing the transmission power by a predetermined amount when the pseudo error occurrence in the error-free reception fulfills the predetermined condition.

13. (Previously Presented) A method as claimed in claim 12, wherein the predetermined condition comprises detecting the pseudo error.

14. (Previously Presented) A method as claimed in claim 12, wherein the predetermined condition comprises detecting a second pseudo error within a predetermined time interval after the last pseudo error.

15. (Previously Presented) A method as claimed in claim 12, wherein the predetermined condition comprises detecting a predetermined number of pseudo errors within a predetermined time interval.

16. (Previously Presented) A method as claimed in claim 12, wherein the transmission power is increased immediately when the pseudo error is detected.

17. (Previously Presented) A method as claimed in claim 12, wherein the transmission power is decreased in predetermined steps for a predetermined time period at each step.

18. (Previously Presented) A method as claimed in claim 17, wherein a predetermined step is 1 dB.

19. (Previously Presented) A method as claimed in claim 12, wherein the method

further comprises

- (a) adjusting the transmission power after the set-up of the radio system to the initial value high enough so that no pseudo errors are detected at the receiving end;
- (b) decreasing the transmission power until a first pseudo error is detected;
- (c) increasing the transmission power in response to the detected pseudo error; and
- (d) jumping to phase (b) if no pseudo errors are detected during a predetermined time period after the transmission power has been increased in phase (c).

20. (Previously Presented) A method as claimed in claim 12, wherein the predetermined amount for increasing the transmission power is 1 or 2 dB.

21. (Previously Presented) A method as claimed in claim 12, wherein the method further comprises

- using forward error correction (FEC) in the transmitted signal;
- decoding the signal at the receiving end by means of a FEC decoder; and
- interpreting the corrections made by the FEC decoder as pseudo errors.

22. (Previously Presented) A method as claimed in claim 12, wherein the method further comprises using at the receiving end a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for

making a decision on whether the pseudo error has occurred.

23. (Previously Presented) A method as claimed in claim 12, wherein the method further comprises

monitoring the rate of actual errors at the receiving end; and

increasing the transmission power temporarily to the maximum transmission power when a predetermined error rate threshold is exceeded.

24. (Previously Presented) A radio system including

at a receiving end, first means adapted to monitor pseudo error occurrence in a received signal and to produce a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur, and

at a transmitting end, second means for adjusting transmission power responsive to said control signal by decreasing the transmission power when the pseudo error occurrence in the error-free reception does not fulfill the predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition.

25. (Previously Presented) A radio system as claimed in claim 24, wherein said first means include a FEC decoder for decoding a FEC coded signal and for detecting pseudo errors.

26. (Previously Presented) A radio system as claimed in claim 24, wherein said first means include a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred.

27. (Previously Presented) A radio receiver configured to monitor pseudo error occurrence in a received signal and to produce a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.

28. (Previously Presented) A radio transmitter configured to adjust transmission power responsive to a control signal, the control signal indicating when pseudo errors are detected in a receiver and when pseudo error occurrence in the receiver is below a predetermined condition for an error-free reception, a pseudo error defining an instant

when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur, by decreasing the transmission power when the pseudo error occurrence does not fulfill the predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition.

29. (Previously Presented) A control unit for a transmitting end of a radio link system, the control unit configured to:

set an initial value of transmission power so that no pseudo errors are detected in a received signal in a receiving end of the radio link system, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur; and

adjust the transmission power responsive to a power control message received in the control unit by decreasing the transmission power when pseudo error occurrence in an error-free reception does not fulfill a predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition, wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication whether pseudo error occurrence in an error-free reception fulfills the predetermined condition.

30. (Previously Presented) A control unit for a receiving end of a radio link system, the control unit configured to produce and send a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.

31. (Previously Presented) A computer program, embodied on a computer readable medium, said computer program controlling a computing system to perform the steps of:

setting an initial value of transmission power so that no pseudo errors are detected in a received signal in a receiving end of the radio link system, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur; and

adjusting the transmission power responsive to a power control message by decreasing the transmission power when pseudo error occurrence in an error-free reception does not fulfill a predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition, wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication whether pseudo error occurrence in an error-free reception fulfills the predetermined condition.

32. (Previously Presented) A computer program, embodied on a computer readable medium, said computer program controlling a computing system to perform the step of producing a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.

33. (Previously Presented) A method for controlling transmission power in a radio link system, the method comprising:

sending a digital signal;

setting an initial value of transmission power so that no pseudo errors are detected in a received signal in a receiving end of the radio link system, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur;

receiving a power control message, which is based on information on pseudo errors detected in the received signal in the receiving end and indicating whether pseudo error occurrence in an error-free reception is below a predetermined condition;

decreasing the transmission power from the initial value when the pseudo error



occurrence in the error-free reception does not fulfill the predetermined condition; and  
increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition.

34. (Previously Presented) A method for controlling transmission power in a radio link system, the method comprising:

receiving a digital signal;

monitoring pseudo error occurrence in the received signal, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur;

producing a power control message based on information on pseudo errors detected in the received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition; and

sending the power control message to a transmitting end of the radio link system.

35. (Previously Presented) A forward error correction decoder for a radio link system, the forward error correction decoder comprising:

a first output for outputting a corrected bit stream, wherein the corrected bit stream is obtained by removing redundancy from a received bit stream; and

a second output for outputting an error signal indicating corrections made by the

forward error correction decoder to obtain the corrected bit stream, wherein the error signal provides information for producing a control signal, the control signal indicating whether pseudo errors are detected in a received signal and whether the pseudo error occurrence in an error-free reception fulfills a predetermined condition, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.

36. (Previously Presented) A method for controlling transmission power in a radio system having a transmitting end and a receiving end, the method comprising:

transmitting a digital signal from the transmitting end to the receiving end;

receiving said digital signal at the receiving end;

setting an initial value of the transmission power so that no pseudo errors are detected, a pseudo error defining an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur;

monitoring pseudo error occurrence in the received signal at the receiving end;

decreasing the transmission power gradually from the initial value at the transmission end when the pseudo error occurrence in an error-free reception does not fulfill a predetermined condition,

increasing the transmission power by a predetermined amount when the pseudo

error occurrence in the error-free reception fulfills the predetermined condition,  
monitoring occurrence of actual errors in the received signal at the receiving end;

and

overriding transmission power control based on monitoring of occurrence of pseudo errors by increasing transmission power if actual errors are observed.

## **APPENDIX 2**

### **EVIDENCE APPENDIX**

No evidence under section 37 CFR 1.130, 1.131, or 1.132 has been entered or will be relied on by Appellants in this appeal.



## APPENDIX 3

### RELATED PROCEEDINGS APPENDIX

No decisions of the Board or of any court have been identified under 37 CFR  
41.37(c)(1)(ii).